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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,988	04/19/2004	Ken Shiozaki	USUI-13W	3495

1218 7590 12/20/2010

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EXAMINER	
BERTHEAUD, PETER JOHN	
ART UNIT	PAPER NUMBER
3746	

MAIL DATE	DELIVERY MODE
12/20/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,988	SHIOZAKI ET AL.	
	Examiner	Art Unit	
	PETER J. BERTHEAUD	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 September 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 September 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/22/2010 has been entered. It should be noted that claims 1 and 3 have been amended and claims 6-14 are new.

Claim Objections

2. Claims 1 and 5 are objected to because of the following informalities: In claim 1, line 29, and claim 5, lines 4 and 8, "sealing housing" should be changed to --housing--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2 and 6-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The newly amended portion of claim 1 recites, "*wherein the selectively operating and turning off the electromagnet is controlled in response to a deviation calculated between the determined desired rotational speed of the housing and the actual fan rotating speed.*" However, the specification clearly states that the deviation "E" is between the "optimum fan rotating speed" and the "actual fan rotating speed." The Examiner realizes that the rotational speed of the housing and the rotational speed of the fan are one in the same, as the fan is attached to the housing. The new matter issue comes into play with respect to the "determined desired rotational speed of the housing."

A "determined desired rotational speed" and an "optimum rotating speed" are two very different things. The specification states that the "optimum fan rotating speed is judged by the main arithmetic controller...on the basis of data" (see pages 14-15 of the specification). As claimed, this data includes temperature of cooling liquid of a radiator, a fan rotating speed, temperature of transmission oil, vehicle speed, engine rotating speed, and pressure of a compressor of an air conditioner. Thus, the controller creates an "optimum" speed at which the fan should be rotated for the purposes of efficiency and/or proper cooling. However, this "optimum" speed is never specifically said to be "desired" in the disclosure. A "desired" speed could be much faster or slower than a determined "optimum" speed depending on how an operator wants to use the invention within an assembly. Having the term "desired" as opposed to "optimum" in the claim,

with respect to a determined rotational speed, greatly changes the scope of the invention. Therefore, since a "determined desired rotational speed of the housing" is not described in original disclosure, these limitations are not supported and are considered new matter. Claims 6-9 also contain references to the "deviation" or the "determined desired rotational speed of the housing".

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3-5 and 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 now recites, "*wherein the operation of the electromagnet for opening the oil circulating flow passage and a turning-off of the electromagnet so that the spring material biases the valve member against the partition plate for closing the oil circulating flow passage are controlled via a fan rotating speed control signal to control the fan rotating speed so that an upper limit rotating speed is set lower than a turning-on rotating speed with respect to an optimum fan rotating speed required from the engine side during normal operation.*" This limitation is rendered indefinite due to a lack of punctuation. It is difficult to determine where one thought or phrase ends and another begins due to a lack of commas, semi-colons, etc. Furthermore, this limitation is also rendered indefinite because it is unclear how the "operation" and "turning-off" are controlled. The limitation states that these two actions are controlled "via a fan rotating speed control signal to control the fan rotating speed so that an upper limit rotating

speed is set lower than a turning-on rotating speed with respect to an optimum fan rotating speed required from the engine side during normal operation." It would seem from the specification that these actions are controlled *by* setting an upper limit rotating speed "lower than a turning-on rotating speed with respect to an optimum fan rotating speed," not *so that* an upper limit rotating speed is set. As it is written, this limitation makes little sense and is thereby considered indefinite. The Examiner suggests the following language: "*wherein the operation of the electromagnet, for opening the oil circulating flow passage, and a turning-off of the electromagnet, so that the spring material biases the valve member against the partition plate for closing the oil circulating flow passage, are controlled via a fan rotating speed control signal by setting an upper limit rotating speed lower than a turning-on rotating speed with respect to an optimum fan rotating speed required from the engine side during normal operation.*"

Claim 3 goes on to state, "*whereby a response delay with respect to the fan rotating speed control signal of a next timing can be shortened and the associative rotation at the engine rotation changing time and the engine starting time can be reduced.*" This limitation is rendered indefinite due to a lack of defined terms. The term "next timing" has not been properly defined by the claim. After trying to put the claim language in context, and a close examination of the specification, the Examiner cannot determine the meaning of "next timing". Therefore, it is not clear what is being claimed by reciting, "whereby a response delay with respect to the fan rotating speed control signal of a next timing can be shortened." What is the "response delay" in response to? What is it being delayed from? The claim also contains the term "associative rotation",

which has not been defined by the claim whatsoever. What parts are involved? The term "engine rotation changing time" also lacks definition. Finally, this limitation seems to be functional language, giving it little patentable weight.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 2 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin 4,556,138 in view of Shiozaki 6,550,596 (Pub. 6/10/2002 US 2002/0003075), in further view of Watanabe 6,247,567, and still in further view of Creger 5,467,854.

Martin discloses, regarding claim 1, a control method of an external control system fan clutch comprising: providing a rotating shaft 4,17, a drive disk 6 fixed to the rotating shaft body and a housing 2, 2' supported through a bearing on the rotating shaft, the housing having an interior, a partition plate 8 in the housing and partitioning the interior into an oil reservoir chamber 9 and a torque transmission chamber 7, said drive disk 6 being in the torque transmission chamber 7, a torque transmission gap being defined between the drive disk 6 and the housing at locations spaced outward from the rotating shaft (see gap between ends of drive disk 6 and the housing 2); an oil circulating flow passage 10 through the partition plate inwardly of the torque

transmission gap and a valve member 11 comprising a spring material and having a magnetic property and being arranged within the oil reservoir chamber 9, the valve member having a fixed end at a radially inner position, a free end at a radially outer position, the free end being aligned for closing oil circulating flow passage 10 formed in the partition plate 8 between the torque transmission chamber 7 and the oil reservoir chamber 9; an armature (within the valve itself) between the fixed end and the free end, an electromagnet 20 is supported by said rotating shaft body through the bearing on the oil reservoir chamber 9 side of said sealing housing 2, 2', and an electromagnet aligned with the armature for controlling the opening and closing of the oil circulating flow passage 10, utilizing a spring characteristic of the spring material of the valve member 11 for biasing the valve member 11 against the partition plate 8 for keeping the oil circulating flow passage in a normally closed condition while keeping the valve member 11 substantially free of magnetic forces acting thereon (see col. 2, lines 31-33); detecting a temperature of cooling liquid of a radiator, and potentially other parameters (see col. 2, lines 61-68), for determining a desired rotational speed of the housing 2, 2'; selectively operating the electromagnet 20 in response to detected signals indicating a need for an increased rotational speed of the housing for attracting armature of the valve member 11 and deflecting the valve member away from the partition plate 8 for opening the oil circulating flow passage 10 to permit a flow of oil through the oil circulating flow 10 passage and radially outwardly into the torque transmission gap between the drive disk 6 and the housing 2, 2' to increase an effective contact area of the oil in the torque transmission gap (see col. 3, lines 12-18); and selectively turning off

the electromagnet 20 in response to detected signals indicative of a requirement for a slower rotational speed of the housing so that the valve member 11 is substantially free of magnetic forces and is biased into the normally closed condition by the spring material (see col. 3, lines 18-21) for controlling rotating torque transmission from a drive side to a driven side by increasing and decreasing an effective contact area of the oil in the torque transmission gap. However, Martin does not teach the specific operating parameter limitations taught by Shiozaki, Watanabe, and Creger.

Shiozaki teaches, further regarding claim 1, a control method of an external control system fan clutch comprising: providing a rotating shaft 1, a drive disk 3 fixed to the rotating shaft body and a housing 2 supported through a bearing on the rotating shaft, the housing having an interior, a partition plate 4 in the housing and partitioning the interior into an oil reservoir chamber 5 and a torque transmission chamber 6, said drive disk 3 being in the torque transmission chamber 6, a torque transmission gap being defined between the drive disk 3 and the housing at locations spaced outward from the rotating shaft (see gap between ends of drive disk 3 and the housing 2); a dam 15 is arranged in one portion of an inner circumferential wall face of the housing opposed to an outer circumferential wall portion of the drive disk 3 for collecting and reservoiring oil at a rotating time, an oil circulating flow passage 7 through the partition plate 4 inwardly of the torque transmission gap and a valve member 9 comprising a spring material and having a magnetic property and being arranged within the oil reservoir chamber 5, the valve member 9 having a fixed end at a radially inner position, a free end at a radially outer position, the free end being aligned for closing oil

circulating flow passage 7 formed in the partition plate 4 between the torque transmission chamber 6 and the oil reservoir chamber 5; an armature 9-2 between the fixed end and the free end, an electromagnet 11 is supported by said rotating shaft body through the bearing on the oil reservoir chamber 5 side of said housing, and an electromagnet 11 aligned with the armature for controlling the opening and closing of the oil circulating flow passage 7, utilizing a spring characteristic of the spring material of the valve member 9 for biasing the valve member against the partition plate 4 for keeping the oil circulating flow passage in a closed condition while magnetic forces act on the armature 9-2 of valve member valve member 9; selectively operating the electromagnet 11; controlling rotating torque transmission from a drive side to a driven side by increasing and decreasing an effective contact area of the oil in a torque transmission gap formed by the drive side and the driven side (see col. 2, lines 16-27); wherein the opening and closing of said valve member could be controlled on the basis of a plurality of signals including a fan rotating speed (see col. 9, lines 63-67), an engine rotating speed, the pressure of a compressor of an air conditioner, and a turning-on or turning-off signal of the air conditioner (see col. 1, lines 6-11, and 47-53). Shiozaki further teaches that the electromagnet may be controlled in response to a deviation calculated between the determined desired rotational speed of the housing and the actual fan rotating speed (again see col. 9, lines 63-67; this is obvious because some deviation must be calculated between actual fan rotation speeds and a desired speed (arbitrary speed) if the desired speed is to be obtained).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin by detecting and using multiple parameters in order to determine a desired rotational speed, as taught by Shiozaki, thereby allowing the fan to cool the engine more efficiently and effectively.

Watanabe teaches, further regarding claim 1, a fan clutch assembly comprising a computer for controlling the rotational speed of the fan in response to, among others, the temperature of the engine cooling water (radiator), the vehicle speed, and the rotational speed of the fan (see col. 3, lines 25-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin by detecting and using multiple parameters in order to determine a desired rotational speed of the fan, as taught by Watanabe, thereby allowing the fan to cool the engine more efficiently and effectively.

Martin in view of Shiozaki and Watanabe discloses the invention as discussed above. However, Martin in view of Shiozaki and Watanabe does not teach the specific operating parameter limitations taught by Creger

Creger teaches, further regarding claim 1, a clutch assembly comprising a controller for controlling gear selection of a power train in response to, among others, a transmission oil temperature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin in view of Shiozaki and Watanabe by detecting and using a transmission oil temperature as a determining

parameter, as taught by Creger, in order to properly select a desired rotational speed of the fan, thereby allowing the fan to cool the engine more efficiently and effectively.

Re claim 2, Martin discloses magnetic materials 21 arranged between said electromagnet 20 and the valve member 11, and is constructed by assembling the magnetic material into the housing 2, 2' so as to transmit a magnetic flux of the electromagnet to the valve member through the magnetic material (see col. 3, lines 1-12). In addition, Martin teaches the claimed invention except for the magnetic material arranged between said electromagnet and the valve member being a ring shape. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the magnetic material of Martin (21) made into the ring shape of a ring, because Applicant has not disclosed that this arrangement, provides an advantage, is used for a particular purpose, or solves a stated problem. It has been held that mere rearrangement of the essential working parts of a device involves only routine skill in the art. In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (see MPEP 2144.04, VI. C. - Rearrangement of Parts).

Re claim 6, Martin, as modified, teaches that a valve opening-closing control signal is calculated on the basis of the deviation, wherein the valve opening-closing control signal selectively operates and turns off the electromagnet (obvious in view of Shiozaki, col. 9, lines 63-67).

Re claim 7, Martin, as modified, teaches that the fan rotating speed is controlled to the determined desired rotational speed of the housing with an on-off rate of a power

voltage to the electromagnet as the valve opening-closing control signal (obvious in view of Shiozaki, col. 9, lines 63-67).

Re claim 8, Martin, as modified, teaches that the fan rotating speed is controlled to the determined desired rotational speed of the housing with an on-off frequency of a power voltage to the electromagnet as the valve opening-closing control signal (obvious in view of Shiozaki, col. 9, lines 63-67).

Re claim 9, Martin, as modified, teaches that wherein the fan rotating speed is controlled to the determined desired rotational speed of the housing with an electric power amount of a power source to the electromagnet as the valve opening-closing control signal (obvious in view of Shiozaki, col. 9, lines 63-67).

9. Claims 3-4 and 10-14, as best as can be understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin 4,556,138 in view of Shiozaki 6,550,596 (Pub. 6/10/2002 US 2002/0003075).

Martin discloses, regarding claim 3, a control method of an external control system fan clutch comprising: providing a rotating shaft 4,17, a drive disk 6 fixed to the rotating shaft body and a housing 2, 2' supported through a bearing on the rotating shaft, the housing having an interior, a partition plate 8 in the housing and partitioning the interior into an oil reservoir chamber 9 and a torque transmission chamber 7, said drive disk 6 being in the torque transmission chamber 7, a torque transmission gap being defined between the drive disk 6 and the housing at locations spaced outward from the rotating shaft (see gap between ends of drive disk 6 and the housing 2); an oil circulating flow passage 10 through the partition plate inwardly of the torque

transmission gap and a valve member 11 comprising a spring material and having a magnetic property and being arranged within the oil reservoir chamber 9, the valve member having a fixed end at a radially inner position, a free end at a radially outer position, the free end being aligned for closing oil circulating flow passage 10 formed in the partition plate 8 between the torque transmission chamber 7 and the oil reservoir chamber 9; an armature (within the valve itself) between the fixed end and the free end, an electromagnet 20 is supported by said rotating shaft body through the bearing on the oil reservoir chamber 9 side of said sealing housing 2, 2', and an electromagnet aligned with the armature for controlling the opening and closing of the oil circulating flow passage 10, utilizing a spring characteristic of the spring material of the valve member 11 for biasing the valve member 11 against the partition plate 8 for keeping the oil circulating flow passage in a normally closed condition while keeping the valve member 11 substantially free of magnetic forces acting thereon (see col. 2, lines 31-33); detecting a temperature of cooling liquid of a radiator, and potentially other parameters (see col. 2, lines 61-68), for determining a desired rotational speed of the housing 2, 2'; selectively operating the electromagnet 20 in response to detected signals indicating a need for an increased rotational speed of the housing for attracting armature of the valve member 11 and deflecting the valve member away from the partition plate 8 for opening the oil circulating flow passage 10 to permit a flow of oil through the oil circulating flow 10 passage and radially outwardly into the torque transmission gap between the drive disk 6 and the housing 2, 2' to increase an effective contact area of the oil in the torque transmission gap (see col. 3, lines 12-18); and selectively turning off

the electromagnet 20 in response to detected signals indicative of a requirement for a slower rotational speed of the housing so that the valve member 11 is substantially free of magnetic forces and is biased into the normally closed condition by the spring material (see col. 3, lines 18-21) for controlling rotating torque transmission from a drive side to a driven side by increasing and decreasing an effective contact area of the oil in the torque transmission gap. However, Martin does not teach the specific operating parameter limitations taught by Shiozaki, Watanabe, and Creger.

Shiozaki teaches, further regarding claim 3, a control method of an external control system fan clutch comprising: providing a rotating shaft 1, a drive disk 3 fixed to the rotating shaft body and a housing 2 supported through a bearing on the rotating shaft, the housing having an interior, a partition plate 4 in the housing and partitioning the interior into an oil reservoir chamber 5 and a torque transmission chamber 6, said drive disk 3 being in the torque transmission chamber 6, a torque transmission gap being defined between the drive disk 3 and the housing at locations spaced outward from the rotating shaft (see gap between ends of drive disk 3 and the housing 2); a dam 15 is arranged in one portion of an inner circumferential wall face of the housing opposed to an outer circumferential wall portion of the drive disk 3 for collecting and reservoiring oil at a rotating time, an oil circulating flow passage 7 through the partition plate 4 inwardly of the torque transmission gap and a valve member 9 comprising a spring material and having a magnetic property and being arranged within the oil reservoir chamber 5, the valve member 9 having a fixed end at a radially inner position, a free end at a radially outer position, the free end being aligned for closing oil

circulating flow passage 7 formed in the partition plate 4 between the torque transmission chamber 6 and the oil reservoir chamber 5; an armature 9-2 between the fixed end and the free end, an electromagnet 11 is supported by said rotating shaft body through the bearing on the oil reservoir chamber 5 side of said housing, and an electromagnet 11 aligned with the armature for controlling the opening and closing of the oil circulating flow passage 7, utilizing a spring characteristic of the spring material of the valve member 9 for biasing the valve member against the partition plate 4 for keeping the oil circulating flow passage in a closed condition while magnetic forces act on the armature 9-2 of valve member valve member 9; selectively operating the electromagnet 11; controlling rotating torque transmission from a drive side to a driven side by increasing and decreasing an effective contact area of the oil in a torque transmission gap portion formed by the drive side and the driven side (see col. 2, lines 16-27); wherein the opening and closing of said valve member could be controlled on the basis of a plurality of signals including a fan rotating speed (see col. 9, lines 63-67), an engine rotating speed, the pressure of a compressor of an air conditioner, and a turning-on or turning-off signal of the air conditioner (see col. 1, lines 6-11, and 47-53). Shiozaki further teaches that the electromagnet is controlled via a fan rotating speed control signal to control the fan rotating speed so that an upper limit rotating speed is set lower than a turning-on rotating speed with respect to an optimum fan rotating speed required from the engine side during normal operation (see col. 10, lines 14-23; the upper limit can be set to any rotating speed), whereby a response delay with respect to the fan rotating speed control signal of a next timing can be shortened and the

associative rotation at the engine rotation changing time and the engine starting time can be reduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin by setting an upper limit rotating speed lower than a turning-on rotating speed with respect to an optimum fan rotating speed, as taught by Shiozaki, in order to assure the same level of cooling regardless of engine rotating speed (Shiozaki, col. 10, lines 14-23).

Furthermore, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function, because apparatus claims cover what a device is, not what a device does (Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990)). Thus, if a prior art structure is capable of performing the intended use as recited in the preamble, or elsewhere in a claim, then it meets the claim.

Re claim 4, Martin discloses magnetic materials 21 arranged between said electromagnet 20 and the valve member 11, and is constructed by assembling the magnetic material into the housing 2, 2' so as to transmit a magnetic flux of the electromagnet to the valve member through the magnetic material (see col. 3, lines 1-12). In addition, Martin teaches the claimed invention except for the magnetic material arranged between said electromagnet and the valve member being a ring shape. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the magnetic material of Martin (21) made

into the ring shape of a ring, because Applicant has not disclosed that this arrangement, provides an advantage, is used for a particular purpose, or solves a stated problem. It has been held that mere rearrangement of the essential working parts of a device involves only routine skill in the art. In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (see MPEP 2144.04, VI. C. - Rearrangement of Parts).

Re claim 10, Martin, as modified, teaches that the fan rotation control signal is temporarily stopped when a differential speed between the engine rotating speed and the fan rotating speed is smaller than a predetermined differential speed (obvious in view of Shiozaki, col. 9, lines 63-67 and col. 10, lines 14-23).

Re claim 11, Martin, as modified, teaches that the fan rotation control signal is temporarily stopped when a differential speed between the engine rotating speed and the optimum fan rotating speed is smaller than a predetermined differential speed and the fan rotating speed is larger than the optimum fan rotating speed (obvious in view of Shiozaki, col. 9, lines 63-67 and col. 10, lines 14-23).

Re claim 12, Martin, as modified, teaches that the fan rotating speed control signal is stopped when the engine rotating acceleration becomes greater than a predetermined value (obvious in view of Shiozaki, col. 9, lines 63-67 and col. 10, lines 14-23).

Re claim 13, Martin, as modified, teaches that the fan rotating speed control signal is stopped when the accelerator (throttle) position acceleration becomes greater than a predetermined value (obvious in view of Shiozaki, col. 9, lines 63-67 and col. 10, lines 14-23).

Re claim 14, Martin, as modified, teaches that a limit is given to a changing rate of the optimum fan rotating speed on the basis of the changing rate of said optimum fan rotating speed (obvious in view of Shiozaki, col. 9, lines 63-67 and col. 10, lines 14-23).

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin 4,556,138 in view of Shiozaki 6,550,596 (Pub. 6/10/2002 US 2002/0003075), in further view of Watanabe 6,247,567, and still in further view of Creger 5,467,854.

Martin in view of Shiozaki discloses the invention as discussed above, including detecting a temperature of cooling liquid of a radiator (Martin col. 2, lines 61-68), a fan rotating speed (Shiozaki, col. 9, lines 63-67), an engine rotating speed, the pressure of a compressor of an air conditioner, and a turning-on or turning-off signal of the air conditioner (Shiozaki, col. 1, lines 6-11, and 47-53) for determining a desired rotational speed of the housing. However, Martin in view of Shiozaki does not teach the specific operating parameter limitations taught by Watanabe and Creger.

Watanabe teaches, further regarding claim 5, a fan clutch assembly comprising a computer for controlling the rotational speed of the fan in response to, among others, the temperature of the engine cooling water (radiator), the vehicle speed, and the rotational speed of the fan (see col. 3, lines 25-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin by detecting and using multiple parameters in order to determine a desired rotational speed of the fan, as taught by Watanabe, thereby allowing the fan to cool the engine more efficiently and effectively.

Martin in view of Shiozaki and Watanabe discloses the invention as discussed above. However, Martin in view of Shiozaki and Watanabe does not teach the specific operating parameter limitations taught by Creger

Creger teaches, further regarding claim 5, a clutch assembly comprising a controller for controlling gear selection of a power train in response to, among others, a transmission oil temperature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin in view of Shiozaki and Watanabe by detecting and using a transmission oil temperature as a determining parameter, as taught by Creger, in order to properly select a desired rotational speed of the fan, thereby allowing the fan to cool the engine more efficiently and effectively.

Response to Arguments

11. Applicant's arguments filed 9/22/2010 have been fully considered but they are not persuasive. In addition to being rejected by 112 1st or 2nd paragraphs, all of the newly claimed structural limitations have been taught by the above rejections under 35 U.S.C. 103(a). These amendments have failed to differentiate Applicant's invention from the prior art in terms of structure, and there is no method step claimed involving the flow of oil or the magnetization of the valve that either Martin and/or Shiozaki do not teach. For clarity's sake, Examiner points out that Martin is primarily responsible for teaching the valve member and electromagnet assembly. Shiozaki, Watanabe, and Creger are responsible for showing that it is well known in the art to use the various control

parameters claimed for adjusting the fan speed. The fact that Shiozaki's valve and magnet assembly works in a somewhat reverse manner is irrelevant because this portion of the assembly is taught Martin.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER J. BERTHEAUD whose telephone number is (571)272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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